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ABSTRACT

Classroom behaviors of two male and two female teachers and 87 pupils were observed over a 3-month period. Attitudes of pupils toward teachers and school also were measured. Boys and girls did not differ on any observed behaviors, including attending, appropriate reading and writing, hand raising and inappropriate behaviors. Nevertheless, boys, as compared to girls, were scolded more by both male and female teachers and were praised more by female teachers. Boys rated male teachers more positively than female teachers whereas girls rated female teachers more positively than male teachers. Boys and girls did not differ in overall attitudes toward school. (Author/SET)

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BEHAVIORS OF MALE AND FEMALE TEACHERS AS RELATED TO BEHAVIORS AND ATTITUDES OF ELEMENTARY SCHOOL CHILDREN

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Abstract

Classroom behaviors of male and female teachers and pupils were observed over a 3-month period. Attitudes of pupils toward teachers and school also were measured. Boys and girls did not differ on any observed behaviors, including attending, appropriate reading and writing, hand raising and inappropriate behaviors. Nevertheless, boys, as compared to girls, were scolded more by both male and female teachers and were praised more by female teachers. Boys rated male teachers more positively than female teachers whereas girls rated female teachers more positively than male teachers. Boys and girls did not differ in overall attitudes toward school.

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A number of investigators (e.g., Kagan, 1969; Sexton, 1969) have suggested that the higher incidence of learning difficulties and school adjustment problems among boys than girls during the early school years is partly the result of a feminizing influence exerted by the American elementary school. Explanations of this feminizing effect, which is attributed to the preponderance of female teachers in elementary schools, stress sex typing of school activities, and/or differential treatment of boys and girls by female teachers.

According to the sex typing explanation, the near-absence of male teachers leads to the identification of school activities with the feminine sex role, hence decreasing boys' motivation to excel in school. In support of this view, Kagan (1969) and Kellogg (1969) have shown that both boys and girls tend to label school objects as feminine. Additionally, in countries such as Japan (Kagan, 1969) and Germany (Preston, 1962), where the majority of elementary school teachers are male, boys score as high as girls or higher in reading, contrary to findings for American pupils.

The differential treatment hypothesis suggests that demands made on school children are more compatible with role expectations for girls than for boys, and that female teachers favor girls and feminine behaviors. Evidence for this position is equivocal. In support of the hypothesis, Fagot and Patterson (1969) found that 83% of all behaviors reinforced by female nursery school teachers were feminine. Further support is pro-

vided by a number of studies (Felsenthal, 1970; Good & Brophy, 1971; Meyer & Thompson, 1956) which have shown that female elementary school teachers reject, ignore, and criticize boys more than they do girls. On the other hand, female teachers call on volunteering boys more than they call on volunteering girls (Felsenthal, 1970), and they tend to praise boys more than girls (Meyer & Thompson, 1956). Davis and Slobodian (1967), however, found that female teachers neither called on nor criticized boys more than girls.

The possibility of female-teacher favoritism directed toward girls, and the absence of appropriate male models in the classroom have led to the suggestion that increasing the numbers of male teachers in the elementary grades will facilitate the school attitudes and behaviors of boys. Observational studies of male teacher interactions with boys and girls clearly are needed, yet the authors are unaware of any such research. The purpose of the present study was to observe the classroom behaviors of both male and female elementary school teachers and to relate these to the behaviors and attitudes of their male and female students.

Method

Subjects

Pupils.- The initial sample consisted of all fifth and sixth graders, 52 girls and 49 boys, attending a traditional middle class public school in East Peoria, Illinois. Complete sets of scores were obtained for 48 girls and 39 boys. (The remaining students were absent on one or more testing days).

All data analyses are based on the scores of these 87 students.

Teachers.- The four teachers participating in the study, two males and two females, each taught a single subject daily to all the fifth and sixth graders. Male 1, 28 years old, taught math; Male 2, 24 years old, taught science; Female 1, 53 years old, taught English; and Female 2, 27 years old, taught social studies.

Procedure

A battery of tests was administered to the students twice, once during the first week of November, 1971 (approximately eight weeks after the start of the school year) and again during the last week of May, 1972. A few days before the testing began, the principal introduced E to the children and emphasized that their written responses would be seen only by the E. The first test administered was Thurstone's Primary Mental Abilities test (PMA), which measures verbal meaning, perceptual speed, reasoning, number facility, and spatial relations. The PMA was given in two sessions separated by two or three days. The second test, administered approximately one week after the PMA, was an attitude scale consisting of two sections. In the first section, the pupils were asked to rank each of the four teachers on each of 31 items (e.g., "Which teacher do you like the best?" "Which teacher scolds you the most?" "Which teacher is most interested in what you do outside of school?") The second part of the attitude scale consisted of 13 items designed to assess general attitudes toward school, such as "Do you like school?" "Is schoolwork hard for you?" "Would you like to be a teacher when

you grow up?" Pupils indicated the relevance of each item for them by checking one of three choices, usually the words "yes," "no," and "sometimes."

The children also completed a family questionnaire which provided information about the presence of the father or other older male figures in the home.

From January until May 1972, E and a female undergraduate psychology major observed both students and teachers in their normal classroom settings during the last two periods of the day. It would have been desirable to observe all pupils in the classrooms of all four teachers. Due to scheduling problems, however, it was possible to observe a given student in either male- or female-taught classes but not both. Each observation interval was 20 seconds, with an additional 10 seconds for recording. Each pupil was observed twice during a given class period. The mean number of observation intervals was 11.00 for fifth grade females, 11.19 for fifth grade males, 9.36 for sixth grade females and 9.69 for sixth grade males. Seven pupil behavior categories were used: attending to work, reading or writing appropriately, hand raising in response to questions and/or asking appropriate questions, prompted verbal behavior to recite or answer, inappropriate behaviors, prompted non-response and leaving the room. Nine teacher behavior categories were employed: praising, scolding, calling on, lecturing, asking the class a question, elaboration, watching, behaviors not involving interaction with the pupils, and giving the pupils permission to leave the room. Female 1 was observed for 276 intervals; Female

2 for 350 intervals; Male 1 for 333 intervals; and Male 2 for 363 intervals.

Following some initial practice sessions, each observer independently recorded both pupil and teacher behaviors in order to determine inter-rater reliability. When sufficient reliability had been established (see results), the actual observation sessions began, with one observer recording pupil behaviors and the other, teacher behaviors. E observed the students, and her assistant observed the teachers, from January until the end of February. At that time they switched so that E was observing the teachers, and her assistant, the pupils. After March, the assistant was unable to participate further (except for a final reliability check) because of prior commitments. The E continued observing alone during April and early May, alternating between sessions of pupil observation and teacher observation.

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Results

Inter-Rater Reliability

Inter-rater reliability was determined for the six most frequent teacher behaviors and the three most frequent pupil behaviors by comparing the ratings of the two observers during two sessions (one for teacher behavior and one for pupil behavior) of approximately 45 minutes each. Reliability was calculated by dividing the number of agreements on occurrence by the number of agreements plus the number of disagreements. The reliability coefficients for the teacher behaviors were: 1.00 for lecturing; .98 for calling-on; 1.00 for elaborating; 1.00 for behaviors not involving interaction with the students; 1.00 for scolding; and

.94 for watching. The coefficients for the pupil behaviors were: .85 for inappropriate behaviors; .81 for attending; and .92 for reading-writing. During the last pupil-observation session in May, a final reliability check for the behaviors of reading-writing and inappropriate behaviors yielded coefficients of .94 and 1.00, respectively.

Pupil Behaviors

The frequency of each pupil classroom behavior per observation interval was analyzed by means of a 2(pupil sex) x 2 (teacher sex) unequal n analysis of variance. (Prompted non-response and leaving the room behaviors did not occur often enough to warrant analysis). Neither the main effect of pupil sex nor the interaction between pupil sex and teacher sex was significant for any pupil behavior. However, a significant main effect of teacher sex emerged for four of the five behaviors. More attending ($F = 15.39$, 1/83, $p < .0005$) and hand raising ($F = 7.29$, 1/83, $p < .01$) and less inappropriate ($F = 7.05$, 1/83, $p < .01$) and reading-writing ($F = 32.91$; 1/83, $p < .00001$) behavior occurred in the female-taught classes than in the male-taught classes.

Teacher Behaviors

To test for overall differences between behaviors of male and female teachers, the differences in proportion of intervals that each sex spent on various behaviors were compared. (Three out of nine behaviors occurred rarely, and were eliminated from analysis: watching, giving permission to leave the room, and behaviors not involving pupil interaction). That the higher

frequency of pupil attending behaviors in the female-taught classes was not merely a function of increased lecturing time is indicated by the fact that female teachers spent less time lecturing than did males ($z = 4.03$, $p < .0001$, two-tailed). Female teachers questioned their pupils more often than did male teachers ($z = 3.58$, $p < .001$, two-tailed), which may account for the higher incidence of both attending and hand raising behaviors in female-taught classes. (Male teachers, on the other hand, were more likely to elaborate on the students' answers, $z = 5.49$, $p < .0001$, two-tailed). Male teachers scolded more than did females ($z = 2.65$, $p < .005$, two-tailed), which may be a consequence (but possibly also a cause) of the higher incidence of inappropriate pupil behaviors in male-taught classes. Females dispensed more praise than males ($z = 2.27$, $p < .02$, two-tailed). No teacher sex differences were found in call-on behavior.

Differential Treatment of Boys and Girls

The observed and expected proportions of each of four categories of teacher behavior directed toward boys were compared separately for each teacher sex. These proportions are shown in Table 1. The expected proportion (under the null hypothesis of no differential treatment of boys and girls) was equivalent to the

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Insert Table 1 about here

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proportion of boys in the teachers' classrooms. On the basis of previous studies, it was predicted that female teachers would interact more with boys than with girls in all behavior categories; hence,

one-tailed significance tests were employed in analyzing their behaviors. Two-tailed tests were used to analyze behaviors of male teachers since no basis for prediction existed. As seen in Table 1, boys were scolded proportionately more than were girls by both male teachers and female teachers. Female teachers also praised boys proportionately more than girls while male teachers dispensed praise equally to the two sexes. Neither male nor female teachers treated boys and girls differentially with respect to call-on or elaboration behaviors.

Attitude Scale

Scores on each of the two sections of the attitude scale were analyzed by means of two 2 (sex of pupil) x 2 (sex of teacher) analyses of variance, one based on the fall scores and one on the spring scores. On the teacher evaluation measure, the interaction between pupil sex and teacher sex was significant both in the fall and in the spring ($F = 3.83$, 1/85, $p<.05$; $F = 12.70$, 1/85, $p < .001$, respectively). Tukey's HSD test indicated that, on both testings, boys rated male teachers more positively than female teachers, whereas girls rated female teachers more positively than male teachers. Boys and girls did not differ in their attitudes toward school on either occasion.

PMA Test Results

Scores on each of the subtests, as well as the total score, were converted to I.Q. equivalents, and analyzed by means of 2 (sex of pupil) X 2 (sex of teacher) unequal n analyses of variance. One set of analyses was carried out on the fall data,

and another on the spring data. During the fall testing, boys performed significantly better than girls on the Spatial Relations subtest ($F = 4.96$, 1/85, $p < .02$) and girls significantly outperformed boys on the Reasoning subtest ($F = 3.94$, 1/85, $p < .05$). On the spring testing, no differences in Spatial Relations scores were found ($F<1$) due primarily to gains made by the girls. The girls again scored significantly higher than the boys in Reasoning ($F = 8.50$, 1/85, $p < .005$) They also were superior in Perceptual Speed ($F = 9.57$, 1/85, $p < .005$), a trend evident to a lesser degree during the fall testing.

Father-Absent vs. Father-Present Boys

The results of the attitude scale and the PMA for father-absent ($N = 10$) and father-present ($N = 29$) boys were compared by means of post-hoc 2 (father-absent vs. father-present) X 2 (teacher sex) unequal n analyses of variance. There were no significant differences between the two groups of boys in attitudes toward school or teachers either in the fall or in the spring. The only difference in PMA performance was on the Spatial Relations subtest. While both groups of boys performed equally well on this subtest in the fall ($F < 1$), father-absent boys tended to score higher than father-present boys in the spring ($F = 2.62$, 1/37, $p < .11$). The difference resulted from improvement in the scores of the father-absent boys; father-present boys showed no change between testings. Comparison of the classroom behaviors of the two groups as a function of teacher's sex was not feasible because of the small number of father-absent boys observed in

female-taught classes.

Discussion

This investigation was prompted by the largely untested claim that male teachers may facilitate the school attitudes and behaviors of male pupils. Relatively little evidence was found to support this claim. Boys and girls were remarkably similar in their behaviors in both male-taught and female-taught classes. Although boys did display more favorable attitudes toward male teachers than toward female teachers, they misbehaved more and attended less in male teachers' classes than in female teachers' classes.

Moreover, male teachers, as well as female teachers, were shown to have negative biases in their treatment of boys. Although boys were as well-behaved as girls, they were scolded more often by both male and female teachers. On the other hand, boys also were praised more than girls by female (but not by male) teachers. These data are consistent with similar findings (Felsenthal, 1970; Good & Brophy, 1971; Meyer & Thompson, 1956) that female teachers interact more with boys than with girls, in both positive and negative ways.

A possible explanation for the disproportionate scolding of boys is that teachers expect boys to be more disobedient than girls (Levitin and Chananie, 1972), and therefore are more likely to attend to and punish misbehaviors of boys. The higher incidence of praise behaviors directed toward boys by female teachers may be interpreted in several ways. Meyer and Thompson

(1956) suggest that teachers, perceiving boys to be more unruly than girls, attempt to reinforce any positive behavior that boys may display. Alternatively, Keye and Thompson speculate that the greater praise given boys reflects compensatory behavior for guilt feelings created in teachers by their excessive scolding of boys.

Most of the sex differences obtained on the PMA--higher spatial relations scores for the boys (in the fall), and higher perceptual speed and reasoning scores for the girls--are consistent with results of many previous investigators (Oetzel, 1966). The improvement in spatial skills shown by girls and father-absent boys is particularly interesting, although the reasons for the change cannot be determined from the present data. Sherman (1967) has suggested that opportunities for learning spatial skills are sex-typed. She notes that boys as a group spend more time than girls in airing and building activities, and model construction. One might add that since such activities are considered primarily masculine, they presumably are often carried out under the guidance of the father, who serves as a model. Following this line of reasoning, both girls and father-absent boys would be less likely than father-present boys to develop spatial skills at home. Perhaps interactions with male teachers provide these children with conditions which facilitate acquisition of spatial skills. One present finding which is at odds with this hypothesis is that father-present and father-absent boys were comparable in spatial ability at the beginning of the school year. The further improvement in spatial skills shown by father-

absent boys during the school year might indicate that male teachers are more salient stimuli for father-absent boys than for father-present boys.

While the gains in spatial ability shown by girls and father-absent boys may have resulted from exposure to a male model, another interpretation is equally plausible, due to the confounding of teacher sex and subject matter. Opportunities for developing spatial skills are much more abundant in the teaching of math and science (male-taught in this study) than in the teaching of English and social studies (female-taught). In fact, mathematics programs emphasizing estimation and visualization have been shown to produce significant improvement in spatial perception (Brinkman, 1966). This finding suggests that the subject matter and the type of training procedures, rather than exposure to a male model, may have been the most important factor in the development of spatial skills shown by girls and father-absent boys in this study. Brophy and Laosa (1971), who also found that male-taught pupils gained more in spatial ability than female-taught pupils, reached a similar conclusion. In their study, as in the present one, teacher sex and curriculum were confounded variables. Further research, in which teacher sex and training procedures are separated and systematically examined, clearly is needed. Such research ideally should include larger numbers of male and female teachers than have been used to date, although from a practical standpoint, the scarcity of male primary school teachers may make it difficult to obtain an

appropriate sample of adequate size.

In conclusion, the findings of this study indicate that the sex of teachers has little differential effect on the behaviors of boys and girls, although children show a clear preference for teachers of the same sex. Furthermore, male teachers appear to be no less free of "sex-bias" in their treatment of boys and girls than are female teachers. Taken together, these findings suggest that simply placing more male teachers in classrooms is not likely to change the school behaviors of boys.

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Footnote

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TABLE I

OBSERVED AND EXPECTED PROPORTIONS OF MALE AND FEMALE TEACHER BEHAVIORS DIRECTED TOWARD BOYS

	Male Teachers			Female Teachers		
Behavior	Observed	Expected	z	Observed	Expected	z
Scold	.72	.54	4.44***	.57	.40	3.35**
Praise	.58	.53	.98	.47	.41	1.54*
Call-on	.54	.53	.04	.40	.41	-
Elaborate	.54	.54	.00	.36	.40	-

Note.- Proportions in each of the "expected" columns are not identical because of rounding errors.

*$p < .06$, one-tailed **$p < .0005$, one-tailed *** $p < .0001$, two-tailed